

Appl. No. 10/552,236
Amtd. Dated November 10, 2008
Reply to Office Action of July 9, 2008

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Amendments to the Claims:

This listing will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently amended): A process for producing a gasket molding material applicable to an automatic coating robot, consisting of a UV-curable liquid polyurethane resin having a viscosity (25°) of 150,000 – 1,000,000 mPa·s, which comprises subjecting (A) a polycarbonatediol having a molecular weight of 500-5,000, (B) a trifunctional alcohol, and (C) a diisocyanate to reaction in the presence of (D) a (meth)acrylate compound represented by the general formula $\text{CH}_2=\text{CRCO}(\text{OC}_n\text{H}_{2n})_p\text{R}'$ (where R is a hydrogen atom or a methyl group, R' is a hydrogen atom, an alkoxy group, or a phenoxy group, n is an integer of 1-12, and p is an integer of 1-5), or the general formula $\text{CH}_2=\text{CRCO}(\text{OC}_m\text{H}_{2m})_q\text{OCOCR}=\text{CH}_2$ (where R is a hydrogen atom or a methyl group, m is an integer of 2-12, and q is an integer of 1-14), and (E) a di(meth)acrylate compound of alkylene glycol whose alkylene group is substituted by a lower alkyl group having 1 to 5 carbon atoms, and by adding (F) a hydroxyl group-containing (meth)acrylate to the resulting solution of urethane oligomers in (meth)acrylate, thereby carrying out terminal (meth)acrylating reaction of the urethane ologomers.

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Claim 2 (Currently amended): A process for producing a gasket molding material UV-curable liquid polyurethane resin according to Claim 1, wherein the terminal (meth)acrylating reaction is carried out after adding (G) a photopolymerization initiator and (H) a hindered phenol-based antioxidant having a molecular weight of 500-2,000 thereto.

Claim 3 (Currently amended): A process for producing a gasket molding material UV-curable liquid polyurethane resin according to Claim 1, wherein after the terminal (meth)acrylating reaction of the urethane oligomers is carried out, (G) a photopolymerization initiator and (H) a hindered phenol-based antioxidant having a molecular weight of 500-2,000 are added to the reaction mixture.

Claim 4 (Canceled)

Claim 5 (Currently amended): A process for producing a gasket molding material UV-curable liquid polyurethane resin according to Claim 1, wherein the trifunctional alcohol as Component (B) is trimethylopropane or an alkylene oxide adduct thereof.

Claim 6 (Currently amended): A process for producing a gasket molding material UV-curable liquid polyurethane resin according to Claim 1, wherein the trifunctional alcohol as Component (B) is used in a proportion of 0.5-10 parts by weight on the basis of 100 parts by weight of the polycarbonatediol as Component (A).

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Claim 7 (Currently amended): A process for producing a gasket molding material UV-curable liquid polyurethane resin according to Claim 1, wherein the diisocyanate as Component (C) is an aromatic diisocyanate.

Claim 8 (Currently amended): A process for producing a gasket molding material UV-curable liquid polyurethane resin according to Claim 1, wherein the diisocyanate as Component (C) is used in a proportion of 20-60 parts by weight on the basis of 100 parts by weight of the polycarbonatediol as Component (A) and in NCO/OH equivalent ratio of 1.01-2.00.

Claim 9 (Currently amended): A process for producing a gasket molding material UV-curable liquid polyurethane resin according to Claim 1, wherein the (meth)acrylate compound as Component (D) is used in a proportion of 10-200 parts by weight on the basis of 100 parts by weight of the polycarbonatediol as Component (A).

Claim 10 (Currently amended): A process for producing a gasket molding material UV-curable liquid polyurethane resin according to Claim 1, wherein Component (E) is 2,2-di(lower alkyl)-1,3-propanediol di(meth)acrylate.

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Claim 11 (Currently amended): A process for producing a gasket molding material UV-curable liquid polyurethane resin according to Claim 1, wherein the lower alkyl-substituted alkylene glycol di(meth)acrylate compound as Component (E) is used in a proportion of 1-20 parts by weight on the basis of 100 parts by weight of the polycarbonatediol as Component (A).

Claim 12 (Currently amended): A process for producing a gasket molding material UV-curable liquid polyurethane resin according to Claim 1, wherein the hydroxyl group-containing (meth)acrylate as Component (F) is used in NCO/OH equivalent ratio of 0.01-0.90 with respect to the terminal isocynate groups of the resulting urethane oligomers.

Claim 13 (Currently amended): A process for producing a gasket molding material UV-curable liquid polyurethane resin according to Claim 2, wherein the photopolymerization initiator as Component (G) is used in a proportion of 0.1-10 parts by weight on the basis of 100 parts by weight of the resulting urethane acrylate oligomers.

Claim 14 (Currently amended): A process for producing a gasket molding material UV-curable liquid polyurethane resin according to Claim 2, wherein the hindered phenol-based antioxidant as Component (H) is used in a proportion of 0.1-10 parts by weight on the basis of 100 parts by weight of the resulting urethane acrylate oligomers.

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Claim 15 (Canceled)

Claim 16 (Canceled)

Claim 17 (Currently amended): An HDD gasket molding material that comprises the gasket molding material of Claim 1, 46.

Claim 18 (Canceled)

Claim 19 (Currently amended): A process for producing a gasket which comprises coating the UV-curable liquid polyurethane resin of Claim 1 45 on a substrate at a temperature of 30°C to 80°C, followed by ultraviolet ray irradiation to cause curing reaction and by a high temperature treatment at 100°C to 180°C.

Claim 20 (Currently amended): A process for producing a gasket molding material UV-curable liquid polyurethane resin according to Claim 5, wherein the trifunctional alcohol as Component (B) is used in a proportion of 0.5-10 parts by weight on the basis of 100 parts by weight of the polycarbonatediol as Component (A).

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Claim 21 (Currently amended): A process for producing a gasket molding material UV-curable liquid polyurethane resin according to Claim 7, wherein the diisocyanate as Component (C) is used in a proportion of 20-60 parts by weight on the basis of 100 parts by weight of the polycarbonatediol as Component (A) and in NCO/OH equivalent ratio of 1.01-2.00.

Claim 22 (Currently amended): A process for producing a gasket molding material UV-curable liquid polyurethane resin according to Claim 10, wherein the lower alkyl-substituted alkylene glycol di(meth)acrylate compound as Component (E) is used in a proportion of 1-20 parts by weight on the basis of 100 parts by weight of the polycarbonatediol as Component (A).

Claim 23 (Canceled)

Claim 24 (Previously presented): A method of producing a HDD gasket according to Claim 17 using an automatic coating robot to apply the HDD gasket molding material.

Claim 25 (Currently amended): A process for producing a gasket molding material UV-curable liquid polyurethane resin according to Claim 1, wherein the terminal (meth)acrylating reaction of the urethane oligomers is carried out after adding (G) a photopolymerization initiator, and (H) a hindered phenol-based antioxidant having a molecular weight of 500-2,000 is added thereto after the reaction is carried out.

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Claim 26 (Currently amended): A process for producing a gasket molding material UV-curable liquid polyurethane resin according to Claim 1, wherein the terminal (meth)acrylating reaction of the urethane oligomers is carried out after adding (H) a hindered phenol-based antioxidant having a molecular weight of 500-2,000, and (G) a photopolymerization initiator is added thereto after the reaction is carried out.